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10/780,436	02/17/2004	Michele L. Ricks	87443RLO	2002

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EXAMINER

GARRETT, DAWN L

ART UNIT PAPER NUMBER

1774

DATE MAILED: 08/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/780,436

Applicant(s)

RICKS ET AL.

Examiner

Dawn Garrett

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 June 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office action is responsive to applicant's response received June 20, 2006. Claims 1-35 are pending.
2. The amendment to the specification filed June 20, 2006 is acknowledged.
3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Terminal Disclaimer

4. The terminal disclaimers filed on June 20, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent Application Nos. 10/882,834, 10/972,671, 10/729,328, and 10/824,086 have been reviewed and are accepted. The terminal disclaimers have been recorded.
5. Applicant indicated a Terminal Disclaimer was filed over 10/950,614; however, that Terminal Disclaimer has not been received by the Office as of the date of this Office action.

Claim Rejections - 35 USC § 103

6. Claims 1-24, 27-29, and 31 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1187235 A2) in view of Aziz et al. (US 2004/0018380 A1). Hatwar discloses white light emitting organic electroluminescent devices comprising a blue light emitting layer and a layer with a yellow light emitter (see abstract). The layer with the yellow light emitter is considered to read upon the light emitting layer in addition to the blue light emitting layer of the claims. Although Hatwar teaches using an anthracene derivative for the

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blue light emitting layer host, Hatwar fails to teach the specific anthracene derivative of the claim 1 formula. Aziz et al. teaches in analogous art anthracene derivatives as host material for a light emitting layer (see par. 76, particularly formulas I(A)(1) (page 5) and I(A)(6) (page 6)). It would have been obvious to one of ordinary skill in the art to have used the anthracene derivatives taught by Aziz et al. for the host material of the Hatwar device, because one would expect the anthracene derivatives taught by Aziz et al. to be similarly useful as a host material in the Hatwar device especially since Hatwar specifically uses anthracene derivatives as the host material of the blue-emitting layer. Hatwar discloses doping the blue light emitting layer in an amount of 1.5% wt. blue dopant per claim 2 (see Table, page 10). With regard to claim 19, it would have been obvious to one of ordinary skill in the art at the time of the invention to have included an additional anthracene derivative host, because it is obvious to use two compounds in combination that are useful for the same purpose. Absent evidence otherwise, “[i]t is *prima facie* obvious to combine two compositions taught by the prior art as useful for the same purpose, in order to form a third composition which is to be used for the very same purpose” (see *In re Kerkhoven*, 205 USPQ 1069, 1072 (CCPA 1980); *In re Susi*, 169 USPQ 423, 426 (CCPA 1971); *In re Crockett*, 126 USPQ 186, 188 (CCPA 1960)).). With regard to claim 3, the secondary reference teaches the inclusion of tertiary amines in the luminescent region (see par. 107). It would have been obvious to one of ordinary skill in the art at the time of the invention to have further included tertiary amines in the luminescent layer of the Hatwar device, because Aziz et al. teaches tertiary amines in the luminescent region and one would expect the materials to be similarly useful in the Hatwar device. With regard to claim 20, the secondary reference teaches the inclusion of polymeric materials in the luminescent region such as poly(phenylene vinylene)

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(see par. 106). It would have been obvious to one of ordinary skill in the art at the time of the invention to have further included a polymeric material in the luminescent layer of the Hatwar device, because Aziz et al. teaches polymeric materials in the luminescent region and one would expect the materials to be similarly useful in the Hatwar device. With regard to claim 21, the secondary reference teaches the inclusion of oxinoid compounds in the luminescent region (see par. 109-110). It would have been obvious to one of ordinary skill in the art at the time of the invention to have further included an oxinoid compound in the luminescent layer of the Hatwar device, because Aziz et al. teaches oxinoid materials in the luminescent region and one would expect the materials to be similarly useful in the Hatwar device. Again, it obvious to combine two materials useful for the same purpose (i.e. host material/material for a luminescent layer). The multilayer OLED taught by Hatwar is useful for a display and for area lighting (see par. 3) with regard to claims 22 and 23. Preferred blue dopants include perylene derivatives (see par. 33) per claims 24 and 27. Preferred yellow dopant includes rubrene derivatives per claims 28 and 29 (see par. 35). With regard to claims 28 (iii) and 31, Aziz et al. teaches DCJTB is a luminescent dopant that is equivalent to rubrene (see par. 104 to 105). Accordingly, it would have been obvious to one of ordinary skill in the art to have used a luminescent dopant such as DCJTB in place of rubrene in the Hatwar device, because Aziz teaches DCJTB may be used as a luminescent dopant in a similar way as rubrene.

7. Claims 28 and 30 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1187235 A2) in view of Aziz et al. (US 2004/0018380 A1) in further view of Fukuoka et al. (US 6,803,120). Hatwar and Aziz et al. are relied upon as set forth above and disclose dopants for light emission. Hatwar and Aziz fail to teach specifically the compound of

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claims 28 and 30. Fukuoka teaches in analogous art teaches red emitting compounds according to the required formula (top of column 11). It would have been obvious to one of ordinary skill in the art to have selected boron complexes taught by Fukuoka for the Hatwar device, because Hatwar clearly teaches fluorescent dopants are desired for the device. One would have a reasonable expectation of success that the compounds taught by Fukuoka would exhibit similar light emitting properties in the Hatwar device.

8. Claims 24 and 25 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1187235 A2) in view of Aziz et al. (US 2004/0018380 A1) in view of Hoag et al. (EP 1340798). Hatwar and Aziz et al. are relied upon as set forth above and disclose blue light emitting materials are used in the light emitting device. Hatwar fails to teach specifically the blue or blue-green boron complexes of claims 24 and 25. Hoag teaches in analogous art teaches blue emitting boron complexes according to the required formula (see entire document, especially Inv-34). It would have been obvious to one of ordinary skill in the art to have selected boron complexes taught by Hoag for the Hatwar device, because Hatwar clearly teaches blue emitting light emitting materials are desired for the devices. One would have a reasonable expectation of success that the boron complexes would exhibit similar light emitting properties in the Hatwar device.

9. Claims 3, 24, and 26 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1187235 A2) in view of Aziz et al. (US 2004/0018380 A1) in view of Hosokawa et al. (US 5,121,029). Hatwar and Aziz et al. are relied upon as set forth above and Hatwar discloses blue light emitting materials are used in the light emitting device. Hatwar fails to teach specifically the compound of claims 24(ii) and 26. Hatwar teaches in analogous art blue

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emitting compounds according to the required formula (see fourth compound in col. 33 and 34 for example). It would have been obvious to one of ordinary skill in the art to have selected the compounds taught by Hosokawa for the Hatwar device, because Hatwar clearly teaches blue emitting light emitting materials are desired for the devices. One would have a reasonable expectation of success that the compounds taught by Hosokawa et al. would exhibit similar light emitting properties in the Hatwar device.

10. Claims 32-35 are again rejected under 35 U.S.C. 103(a) as being unpatentable over Hatwar (EP 1187235 A2) in view of Aziz et al. (US 2004/0018380 A1) in further view of Wolk et al. (US 6,194,119). Hatwar and Aziz et al. are relied upon as set forth above. Hatwar fails to teach the white light emitting device further includes filters. Wolk et al. teaches it is well known in the art to incorporate red, blue and green filters with a device in order to achieve a desired color output (see col. 17, line 65 to col. 18, line 23). It would have been obvious to one of ordinary skill in the art at the time of the invention to have included red, green, and blue color filters with the Hatwar device, because such an inclusion would provide the further benefit of desired light emission. The wavelength ranges set forth in claims 33-35 are the common ranges for the colors of red, blue, and green in the visible spectrum and accordingly, the red, green and blue filters taught by Wolk et al. are deemed to be within the ranges absent evidence otherwise.

Double Patenting

11. Claims 1, 4-18, 22, 23, 24, 27, 28, and 31 are again provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-26 of copending Application No. 10/950,614. Although the conflicting claims are not identical, they are not patentably distinct from each other because '614 claims the same host material and

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dopants. Claim 6 of '614 sets forth multiple light emitting layer in order to achieve white light emission.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

12. The rejection of claims 1, 4-18, 22-25, and 28-31 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending Application No. 10/882,834 is withdrawn due to the terminal disclaimer.

13. The rejection of claims 1-31 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-58 of copending Application No. 10/972,671 with withdrawn due to the terminal disclaimer.

14. The rejection of claims 1-31 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-33 of copending Application No. 10/729,328 is withdrawn due to the terminal disclaimer.

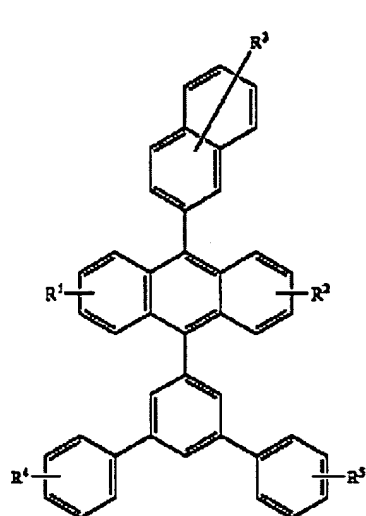
15. The rejection of claims 1-35 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-37 of copending Application No. 10/824,086 is withdrawn due to the terminal disclaimer.

Response to Arguments

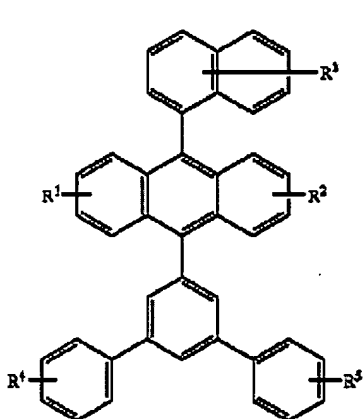
16. Applicant's arguments filed June 20, 2006 have been fully considered but they are not persuasive.

Applicant argues the secondary reference "Aziz et al. discloses a number of anthracene derivatives that can be used as host material. None of these are the same as the claimed structure. Particularly the Examiner's attention is call to substituent R10." The examiner

recognizes applicant's substituent R10 is a biphenyl group. Aziz et al. clearly discloses anthracene derivatives according to the requirements of the claim 1 formula. See specifically page 6 of Aziz et al. formulas I(A)(6) and I(A)(7):



11(A)(5)



I(A)(7)

These compounds are the same as disclosed by applicant in the instant specification as Host 5 on page 8 and Host 17 on page 11.

The only comparative example shown by applicant in the specification uses the anthracene derivative TBADN. This one example is not considered sufficient to establish unexpected results. The primary reference teaches other anthracene derivatives besides TBADN.

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Furthermore, the comparative example uses a percentage of NPB different from any of the inventive examples and luminance is actually greater for the comparative example. The one comparative example is not considered fully commensurate in scope with the prior art to establish unexpected results and there is not an inventive example with the same amount of NPB for clear comparison with the comparative example. Furthermore, the examples are also not considered commensurate in scope with the claims, because the claims do not expressly require NPB in the light emitting layer, which is used in all of the examples in the light emitting layer with the anthracene derivative hosts. In the examples it is unclear if the better lifetime results pointed to by applicant are due to the anthracene host material or if the results are due to the interaction between the anthracene compounds and the specific compound NPB.

With regard to the rejections over Hatwar in view of Aziz in further view of Fukuoka et al., Hoag et al., Hosokawa et al., and Wolk et al., the rejections of record are respectfully maintained. The only argument set forth for these rejections is that “None of these references provide any suggestion for the monoanthracene derivative of claim 1.” The examiner submits the monoanthracene derivative is rendered obvious by Hatwar in view of Aziz as set forth in the record.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after


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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dawn Garrett whose telephone number is (571) 272-1523. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye can be reached at (571) 272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Dawn Garrett
Primary Examiner
Art Unit 1774

August 11, 2006